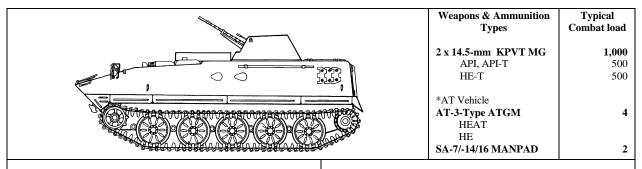
North Korean Armored Personnel Carrier VTT-323



SYSTEM

Alternative Designations: M1973 Date of Introduction: 1973 Proliferation: At least one country

Description:

Crew: 3 Troop Capacity: 9 passengers

Combat Weight (mt): 13.5 Length Overall (m): 6.20 Height Overall (m): 2.50 Width Overall (m): 3.06 Ground Pressure (kg/cm²): 0.58

Automotive Performance:

Engine Type: 260-hp Diesel Cruising Range (km): 450

Speed (km/h):

Max Road: 80
Max Off-Road: 70-80
Average Cross-Country: INA
Max Swim: 10
Fording Depths (m): Amphibious

Radio: INA

Protection:

Armor, Turret Front (mm): 24 Applique Armor (mm): No

Explosive Reactive Armor (mm): No Active Protective System: No NBC Protection System: No Smoke Equipment: No

ARMAMENT

Main Armament:

Caliber, Type, Name: 2 x 14.5-mm (14.5x114) Heavy MGs, KPVT

Rate of Fire (rd/min): 300 practical (2 x 150)

Loader Type: Belt Ready/Stowed Rounds: INA Elevation (°): -5 to +60 Fire on Move: Yes **Auxiliary Weapon:** None **Firing Ports:** 2 on each side

ATGM Launcher:

Name: 9P111-type Launch Method: Rail-launched Guidance: MCLOS Command Link: Wire Launcher Dismountable: Yes FIRE CONTROL FCS Name: No

Main Gun Stabilization: No (est.)

Rangefinder: No Infrared Searchlight: No Sights w/Magnification:

Gunner: Day: INA

> Field of View (°): INA Acquisition Range (m): 1,500

Night: INA

Commander Fire Main Gun: No

VARIANTS

North Korean variant of Chinese **YW 531A/ Type 63-II** APC. An AT variant also mounts an AT-3-type ATGM launcher, and may include a SA-14 or SA-16 manportable air defense launcher.

Other vehicles using the chassis are the **PT-85** light tank, a 120-mm combination gun, a 122-mm SP howitzer, 107-mm MRLs (12/18/24 tubes), a 4-barreled 14.5-mm SP AA Gun, the M1985 (AT-3-type 4-rail) ATGM launcher vehicle, and 82- and 120-mm SP mortars.

MAIN ARMAMENT AMMUNITION

Caliber, Type, Name: 14.5-mm API-T Max Aimed Range (m): 2,000 (EST)

Max Effective Range (m):

Day: 1,500 Night: INA

Tactical AA Range: 1,500

Armor Penetration (mm): 20 at 1,000 m/ 30 at 500 m, 38 at muzzle

Other Ammunition Types: API, I-T, HE-T Type MDZ

ANTITANK GUIDED MISSILES See AT-3 for ATGM types.

Name: AT-3c Imp/ Polk (Slovenian) Warhead Type: Tandem HEAT Armor Penetration (mm): 580 (RHA)

Range (m): 3,000

Name: Red Arrow-73A (Chinese)

Warhead Type: HEAT

Armor Penetration (mm): 500 RHA

Range (m): 3,000

Name: Red Arrow-73B/C (Chinese)

Warhead Type: HEAT

Armor Penetration (mm): 600 RHA

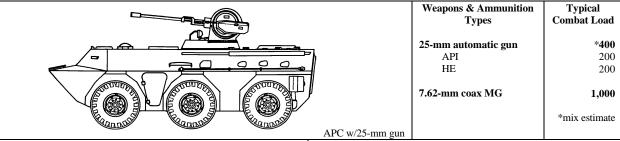
Range (m): 3,000

Other ATGMs: I-RAAD (Iranian), Malyutka-2 HE (Russian)

NOTES

Thermal sights are available. Slovenian TS-M ATGM thermal night sight ranges are: detection 4,500 m, recognition 2,000 m. The HE-Blast ATGM is used for killing personnel and destroying bunkers and other fortifications.

Chinese Armored Personnel Carrier WZ 551



SYSTEM

Alternative Designations: M1986/1, M1986/2, Type 86

Date of Introduction: 1994 Proliferation: At least 3 countries

Description:

Crew: 3

Troop Capacity: 10 Combat Weight (mt): 15.3 Chassis Length Overall (m): 6.63 Height Overall (m): 2.89 Width Overall (m): 2.80 Ground Pressure (kg/cm²): INA

Drive Formula: 6 x 6

Automotive Performance:

Engine Type: 256-hp Diesel Cruising Range (km): 600

Speed (km/h): Max Road: 85 Max Off-Road: INA Average Cross-Country: INA

Max Swim: 8

Fording Depths (m): Amphibious

Radio: INA

Protection:

Armor, Turret Front (mm): INA Applique Armor (mm): N/A Explosive Reactive Armor (mm): N/A Mineclearing Equipment: No Self-Entrenching Blade: No

Active Protective System: N/A NBC Protection System: Collective

Smoke Equipment: 8 smoke grenade launchers

ARMAMENT

Main Armament:

Caliber, Type, Name: 25-mm automatic overhead turreted gun Rate of Fire (rd/min): 100/300/500 in bursts, or semi-automatic

Loader Type: Drum feed Ready/Stowed Rounds: 200/200 Elevation (°): -8 to +55

Fire on Move: Yes, reduced range (est.)

Auxiliary Weapon:

Caliber, Type, Name: 7.62-mm machinegun PKT

Mount Type: Coax Max Aimed Range (m): 2,000 Max Effective Range (m):

Day: 1,000 Night: 800+ Fire on Move: Yes

Rate of Fire (rd/min): 250 practical/ 650 cyclic, 2-10 round bursts

ATGM Launcher: N/A Firing Ports: 4 FIRE CONTROL FCS Name: N/A

Main Gun Stabilization: INA

Rangefinder: INA

Infrared Searchlight: IR sight w/searchlight optional

Sights w/Magnification: Gunner: Day/night sight

Day: INA

Field of View (°): INA Acquisition Range (m): INA

Night: II

Field of View (°): INA Acquisition Range (m): INA Commander Fire Main Gun: No

VARIANTS

Other versions include APCs with other 25-mm guns, and with 12.7mm machinegun. There are also IFV variants with the Dragar 1-man turret and 25-mm gun, and the BMP-1 turret with 73-mm gun. Other vehicle types include: C3 vehicle, ambulance, and an engineer vehicle. The ATGM launcher vehicle variants launch Red Arrow-8E (HJ-8E), and the new Red Arrow-9 (HJ-9) ATGM.

MAIN ARMAMENT AMMUNITION

Caliber, Type, Name: 25-mm API Max Aimed Range (m): INA Max Effective Range (m):

Day: 2.000 (est.) Night: INA

Tactical AA Range: 2,000 (est) Armor Penetration (mm): INA

Caliber, Type, Name: 25-mm HE Max Aimed Range (m): INA Max Effective Range (m): Day: 2,000+ (est)

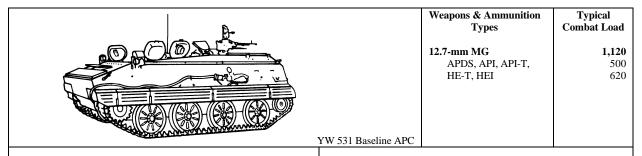
Night: INA

Tactical AA Range: 2,000 (est) Armor penetration (mm): INA

Other Ammunition Types: INA

The tires have run-flat capability.

Chinese Armored Personnel Carrier YW 531A/531C



SYSTEM Data is for YW 531A/C where different **Alternative Designations:** Type 63, North Korean M1967

Date of Introduction: Late 1960s **Proliferation:** At least 9 countries

Description: Crew: 4

Troop Capacity: 10 passengers Combat Weight (mt): 12.60 Chassis Length Overall (m): 5.48 Height Overall (m): 2.85 Width Overall (m): 2.98 Ground Pressure (kg/cm²): 0.44

Automotive Performance:

Engine Type: 260-hp Diesel/320-hp Diesel

Cruising Range (km): 500

Speed (km/h):

Max Road: 42/66 Max Off-Road: 32/40 Average Cross-Country: INA

Max Swim: 6.0

Fording Depths (m): Amphibious

Radio: Type 889

Protection:

Armor, Turret Front (mm): 14, front glacis

Applique Armor (mm): N/A

Explosive Reactive Armor (mm): N/A

Mineclearing Equipment: N/A
Self-Entrenching Blade: N/A
Active Protective System: NA
NBC Protection System: N/A
Smoke Equipment: N/A

ARMAMENT

Main Armament:

Caliber, Type, Name: 12.7-mm (12.7 x 108), heavy MG, Type 54 Rate of Fire (rd/min): 80-100 practical/600 air targets in bursts

Loader Type: Belt feed Ready/Stowed Rounds: INA Elevation (°): -5 to +85 Fire on Move: Yes

Auxiliary Weapon: N/A **ATGM Launcher:** N/A

Firing Ports: 2 left side, 1 right, 1 in the rear/1 each side and rear

FIRE CONTROL FCS Name: N/A

NOTES

Type 54 MG is a Chinese copy of former Soviet 12.7-mm DShKM.

Main Gun Stabilization: N/A

Rangefinder: N/A

Infrared Searchlight: N/A Sights w/Magnification:

Gunner:

Day: Open ladder sight, optical sight, NFI

Field of View (°): INA Acquisition Range (m): 3,300

Night: N/A

Commander Fire Main Gun: No

VARIANTS

YW531A/Type 63-II: Upgrade APC with gun shield. Other vehicles with this chassis are: YW 531B and Type 54-1 122-mm SP howitzer, Type 70 130-mm (19-tube) MRL, and a Red Arrow-8 ATGM launcher vehicle with 4-rail launcher and 4 stowed ATGMs.

YW-531C: Variant APC with gun shield, better vision ports, and ventilation. Other vehicles use this chassis, including YW 750 ambulance, and YW 701A/B and YW 702 command post vehicles. The C, D and E variants differ in intercom sets and firing ports. Two SP mortar variants are Type YW-304 (82-mm M-1937 type, 120 rounds, 3,040 m) and Type YW-381 (120-mm, 50 rds, 7,700 m).

YW-531H/Type 85, Type 89, and Type 90: Expanded 5-road wheel variants. For the -H variant and vehicle series, see sheet.

VTT-323: North Korean variant, also known as M1973 (See sheet).

MAIN ARMAMENT AMMUNITION

Caliber, Type, Name:

12.7-mm, APDS (Tungsten Core), Type 54 Max Aimed Range (m): 2,000 (est)

Max Effective Range (m):

Day: 1,500 vehicles, 1,600 aircraft

Night: INA

Tactical AA Range: 1,600 Armor Penetration (mm): INA

12.7-mm, API, Type 54

Max Aimed Range (m): 2,000 (est)

Max Effective Range (m):

Day: 1,500 Unarmored ground, 800 armored vehicles

Night: INA

Tactical AA Range: 1,600

Armor Penetration (mm): 21 (RHA) at 500 m, 13 at 1,000 m

Other Ammunition Types: API-T, Russian Duplex, Russian Duplex-

T, Incendiary-T, HE-T Type MDZ, HEI Type ZP

Chinese Armored Personnel Carrier YW 531H and Vehicle Series Type 85_



	Weapons & Ammunition Types	Typical Combat Load
	12.7-mm MG APDS, API, API-T, HE-T, HEI	1,120 500 620
	or	
л	Missile Launcher (ATGM launcher vehicle) HEAT ATGM	8

Type 85 ATGM Launcher Vehicle with Red Arrow-8 ATGM

SYSTEM: Data is for APC / ATGM vehicle where different **Alternative Designations:** Type 85 is preferred nomenclature

Date of Introduction: 1986 **Proliferation:** At least 4 countries

Description: Crew: 2/4

Troop Capacity: 13 / 0 passengers Combat Weight (mt): 13.6 / 13.8 Chassis Length Overall (m): 5.9 Height Overall (m): 2.85 / INA Width Overall (m): 2.98 Ground Pressure (kg/cm²): 0.59

Automotive Performance:

Engine Type: 320-hp Diesel Cruising Range (km): 500

Speed (km/h):

Max Road: 65 / 60 Max Off-Road: 46 Average Cross-Country: 35 Max Swim: 6.0

Fording Depths (m): Amphibious

Radio: Type 889 / Type 889 or VRC 83

Protection:

Armor, Turret Front (mm): 14 front glacis

Applique Armor (mm): N/A Explosive Reactive Armor (mm): N/A Mineclearing Equipment: N/A Self-Entrenching Blade: N/A Active Protective System: N/A NBC Protection System: N/A

Smoke Equipment: 2 x 4 grenade launchers, some versions

ARMAMENT

Main Armament

Caliber, Type, Name: 12.7-mm (12.7 x 108), heavy MG, Type 54 Rate of Fire (rd/min): 80-100 practical/600 air, in bursts / 2-3

Loader Type: Belt feed

Ready/Stowed Rounds: 4/4 for ATGM launcher vehicle

Elevation (°): -4 to +82 / -7 to +13

Fire on Move: Yes / No

Auxiliary Weapon: N/A ATGM Launcher: N/A

Firing Ports: 6-7 (3 on each side, 1 in rear door, Thai version)

FIRE CONTROL FCS Name: N/A

Main Gun Stabilization: N/A

Rangefinder: N/A Infrared Searchlight: N/A Sights w/Magnification:

Gunner:

Day: Open ladder sight / day periscope

Field of View (°): INA

Acquisition Range (m): 2,000 / 4,000 Night: INA / Thermal sight optional Commander Fire Main Gun: No

VARIANTS

Type 85: Export vehicle series derived from the C-variant APC but expanded, and with addition of a fifth road wheel. Note: **Thai** version has .50 cal (12.7-mm) M2HB MG vs Type 54. The -H APC sired a new family of combat and support vehicles. Combat variants include: armored command APC, **YW 309** IFV (73-mm gun),

NVH-1 IFV (25- or 30-mm gun), NVH-4 IFV (25-mm gun), Type 70-1/YW 302 122-mm SP howitzers and YW 306 130-mm MRL. Support vehicles include a maintenance engineer vehicle, recovery vehicle, command post vehicle, fire fighting vehicle, and WZ 751 ambulance. Mortars are SP Type 67 82-mm (M1937-type, 120 rounds, 3,040 m max range), and YW 381 120-mm (50 rounds, 7,700 m max range). Each also has a 12.7-mm MG with 540 rounds.

Type 85 ATGM launcher vehicle: Raised hull variant with 4-rail launcher turret for Red Arrow-8 SACLOS wire-guided ATGM. The ROF is 2-3 rd/min. See launcher sheet for ATGM data.

Type 89/ YW 534: A 5-wheeled APC, combat, and support vehicle series (250 mm longer and 74 mm wider) for Chinese forces.

MAIN ARMAMENT AMMUNITION

Caliber, Type, Name:

12.7-mm, APDS (Tungsten Core), Type 54

Max Aimed Range (m): 2,000 Max Effective Range (m):

Day: 1,500 vehicles /1,600 aircraft

Night: INA

Tactical AA Range: 1,600 Armor Penetration (mm): INA

12.7-mm, API, Type 54 Max Aimed Range (m): 2,000 Max Effective Range (m):

Day: 1,500 Unarmored ground / 800 armored

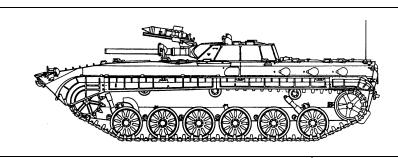
Night: INA

Tactical AA Range: 1,000

Armor Penetration (mm): 21 (RHA) at 500 m, 13 at 1,000 m

Other Ammunition Types: API-T, Russian Duplex, Russian Duplex-T, Incendiary-T, HE-T Type MDZ, HEI Type ZP

Russian Infantry Fighting Vehicle BMP-1



Weapons & Ammunition Types	Typical Combat load
73-mm gun HEAT HE	40 20 20
AT-3/a/b/C/Imp ATGM	5
HEAT HE	3 2
7.62-mm coax MG	2,000

SYSTEM

Alternative Designations: BMP Model 1970, Korshun

Date of Introduction: 1970 **Proliferation:** At least 33 countries

Description:

Crew: 3

Troop Capacity: 6 passengers (+2) Combat Weight (mt): 13.3 Length Overall (m): 6.74 Height Overall (m): 2.15 Width Overall (m): 2.94 Ground Pressure (kg/cm²): 0.57

Automotive Performance:

Engine Type: Diesel Cruising Range (km): 600

Speed (km/h):
Max Road: 65
Max Off-Road: 40-45
Average Cross-Country: INA

Max Swim: 7 Fording Depths (m): Amphibious

Mineclearing Equipment: KMT-8 or 10 mine plow available

Self-Entrenching Blade: No **Radio:** R-123, R-M or R-173

Protection:

Armor, Turret Front (mm): 19-23 Applique Armor (mm): Available

Explosive Reactive Armor (mm): Available

Active Protective System: No

NBC Protection System: Collective protection

Smoke Equipment: Vehicle engine exhaust smoke system (VEESS)

ARMAMENT Main Armament:

Caliber, Type, Name: 73-mm smoothbore gun 2A28/Grom

Rate of Fire: 7-8 rd/min Loader Type: Autoloader Ready/Stowed Rounds: 40 / 0 Elevation (°): -4 to +33

Fire on Move: Yes, but only 10 km/h or less (est.)

Auxiliary Weapon:

Caliber, Type, Name: 7.62-mm (7.62x 54R) Machinegun PKT

Mount Type: Coax

Max Aimed Range (m): 1,300 Max Effective Range (m):

Day: 1,000 / 400-500 on the move

Night: 800 Fire on Move: Yes

Rate of Fire: 250 rpm (practical, in 2-10 round bursts)

Firing Ports: 4 on each side, 1 in left rear door

ATGM Launcher:

Name: 9P111

Launch Method: Rail-launched

Guidance: MCLOS Command Link: Wire Launcher Dismountable: Yes

FIRE CONTROL

FCS Name: INA

Main Gun Stabilization: No Rangefinder: Laser Infrared Searchlight: Yes Sights w/Magnification:

Gunner:

Day: 1PN22M1, 8x Field of View (°): 15 Acquisition Range (m): Night: 1PN22M1, 6x Field of View (°): 6

Acquisition Range (m): 800-1,000, based on light

Commander Fire Main Gun: No

VARIANTS

Earlier models, referred to as **BMP** and **BMP-A** were produced in small numbers from 1966. The standard BMP-1 (**Model 1970**) features improved fume venting, NBC protection, and swim features. Copies include: Chinese **WZ 501/Type 86**, **Czech BVP-1**, and the Polish **BWP-1**. A variety of variant IFVs/APCs and support vehicles have been developed using this chassis. For instance, the Chinese **WZ 503** is a raised hull APC variant replacing the 73-mm gun with a 12.7-mm MG. The **WZ 504** is an ATGM launcher vehicle with 4-rail AT-3-type ATGM launcher. The **WZ 505** is an ambulance vehicle; and **WZ 506** is a regimental command and staff vehicle.

BMP-1K: Company command IFV, with added R-126 and R-107 transceivers. Firing ports and most periscopes are blocked.

BMP-1KSh: Former Soviet regiment or division command and staff vehicle, with turret mounted erectable 10-meter radio mast. Radios include R-130, R-111, and R-173.

 $BMP\mbox{-}1M\mbox{:}\;$ Iranian variant with drop rear gate vs double doors.

BMP-1P: Widely fielded FSU IFV with an AT-4/5 ATGM launcher and smoke grenade launchers (see pp. 2-21 and 2-22).

BMP-1PG: Recently offered upgrade similar to BMP-1P with an automatic grenade launcher and other options (see p. 2-21).

BMP-1PK: Command variant for BMP-1P (see p. 2-21).

Russian Infantry Fighting Vehicle BMP-1 continued

BPzV: Czechoslovakian reconnaissance variant with a TALL MIKE external tripod mounted radar.

BREM-2: Light recovery and repair vehicle with a light crane.

BREM-4: Armored recovery vehicle. Czech version is VPV.

BRM-1, **BRM-1K:** Reconnaissance command variants with improved sensors and low-profile 2-man turret (see p. 3-4).

BRM-23: Bulgarian reconnaissance variant with a 23-mm cannon, AT-3 ATGM, navigation system, NBC and artillery reconnaissance devices, and image intensifier night sights.

IMR: Armored engineer tractor, with crane and dozer blade.

IRM: Engineer underwater reconnaissance vehicle, with mine detectors and mapping capabilities.

MLI-84: Romanian APC variant with a 12.7-mm MG.

MP-31: Modernized command and staff vehicle.

OT-90: Czech APC variant with 14.5-mm and 7.62-mm MGs.

PRAM-S: Czechoslovakian self-propelled 120-mm mortar variant.

PRP-3/PRP-4: Artillery reconnaissance vehicle (see p. 6-3).

Snezka: Czech stretched version battlefield surveillance vehicle, with a sensor suite (including radar) mounted on a telescoping arm.

SVO: Czechoslovakian turretless mine clearing variant with 24 large rocket-propelled line charges.

VP90: Czech reconnaissance vehicle with 14.5 and 7.62-mm MGs

Main Armament Ammunition:

Caliber, Type, Name: 73-mm HEAT-FS, PG-9

Max Aimed Range (m): 1,300 Max Effective Range (m):

Day: 800, but 600 or less on the move in 2-4 rd bursts

Night: 800 Tactical AA Range: INA

Armor Penetration (mm): 335 (RHA)

Caliber, Type, Name: 73-mm HEAT-FS, NFI

Max Aimed Range (m): 1,300

Max Effective Range (m):

Day: 1,000/600 or less on the move

Night: 800-1,000 Tactical AA Range: INA

Armor Penetration (mm): >400 (RHA)

Caliber, Type, Name: 73-mm HE, OG-9M1

Max Aimed Range (m): 4,500 Max Effective Range (m):

Day: 1,300/600-1,000 on the move

Night: 800-1,000 Tactical AA Range: INA Armor penetration (mm): INA

Other Ammunition Types: OG-9, OG-9M

Antitank Guided Missiles:

Name: AT-3 Malyutka/-3a, -b Malyutka-M

Warhead Type: Tandem HEAT Armor Penetration (mm): 410 (RHA)

Range (m): 800-3,000

Name: AT-3c/ Malyutka-P Warhead Type: Tandem HEAT Armor Penetration (mm): 520 (RHA)

Range (m): 800-3,000

Name: AT-3c Imp/ Polk (Slovenia) Warhead Type: Tandem HEAT Armor Penetration (mm): 580 (RHA)

Range (m): 3,000

Name: Malyutka-2 (Russian) Warhead Type: Tandem HEAT Armor Penetration (mm): 800 (RHA)

Range (m): 3,000

Name: Red Arrow-73A (Chinese)

Warhead Type: HEAT

Armor Penetration (mm): 500 RHA

Range (m): 3,000

Name: Red Arrow-73B/C (Chinese)

Warhead Type: HEAT

Armor Penetration (mm): 600 RHA

Range (m): 3,000

Name: Malyutka-2 HE (Russian) Warhead Type: Frag-HE Armor Penetration (mm): INA

Range (m): 3,000

NOTES

Thermal gunner sights are available; however, most upgrades involve adding a thermal sight with an improved gun and improved fire control system. The Slovenian TS-M ATGM thermal night sight has a detection range of 4,500 m and a recognition range of 2,000 m.

Russian BMP-2 2-man turrets with gun and fire control system are being marketed for BMP-1 customers. The Volgorod Tractor Plant offers the BMP-1/B30 package with a B30 turret (a drop-in one-man turret with 2A42 30-mm gun, 7.62-mm coax MG, BMP-2-type fire control system, PZU-8 AA sight, and a 9P135M ATGM launcher for AT-4/-5 ATGM). Russian KBP offers a drop-in one-man turret, called Kliver, with a stabilized 2A72 30-mm gun, a 4-Kornet ATGM launcher, thermal sights, and improved fire control system. A Ukrainian turret is also available.

Russian AG-17 30-mm AGL modification is available for use on BMP-1. A French SNPE ERA kit and others are available for use on the BMP-1. Other options are improved tracks, spall liners, air conditioning, smoke grenade launchers/laser warning receivers, and a more powerful engine (360 hp).

The AT-3-type ATGM can be upgraded by an operator with a new warhead in minutes. Low-mid-level maintenance can upgrade the missile motor. The HE-Blast ATGM is used for killing personnel and destroying bunkers and other fortifications. The AT-3C Polk features a nose probe, an improved motor for increased velocity, lower smoke and noise signature, and a SACLOS launcher with improved sights.